

**IN THE CLAIMS****Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and the applicant and/or assignee reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application.

**Listing of Claims:**

Claims 1-22 (Canceled)

23. (New): An article of manufacture comprising a storage medium having instructions stored thereon that, if executed, result in:

receiving content for transmission via a multicarrier wireless communication channel;  
and

generating a rate-one, space-frequency code matrix from the received content for transmission on the multicarrier wireless communication channel from three or more of transmit antennae.

24. (New): An article of manufacture as claimed in claim 23, wherein the received content is a vector of input symbols (s) of size  $N_c \times 1$ , wherein  $N_c$  is the number of subcarriers of the multicarrier wireless communication channel.

25. (New): An article of manufacture as claimed in claim 24, said generating a rate-one space frequency code matrix comprising:

dividing the vector of input symbols into a number  $G$  of groups to generate subgroups;  
and

multiplying at least a subset of the subgroups by a constellation rotation precoder to produce a number  $G$  of pre-coded vectors (vg).

26. (New): An article of manufacture as claimed in claim 25, wherein the instructions, if executed, further result in:

dividing each of the pre-coded vectors into a number of  $L_M \times 1$  subvectors; and

creating an  $M \times M$  diagonal matrix  $D_k$ , where  $k=1 \dots L$  from the subvectors.

27. (New): An article of manufacture as claimed in claim 26, wherein the instructions, if executed, further result in:

interleaving the  $L$  submatrices from the  $G$  groups to generate an  $M \times N_c$  space-frequency matrix.

28. (New): An article of manufacture as claimed in claim 27, wherein the space-frequency matrix provides  $M \times N \times L$  channel diversity, while preserving a code rate of 1 for any number of transmit antenna(s)  $M$ , receive antenna(s)  $N$  and channel tap(s)  $L$ .

29. (New): An article of manufacture as claimed in claim 23, wherein the space-frequency matrix provides  $M \times N \times L$  channel diversity, while preserving a code rate of 1 for any number of transmit antenna(s)  $M$ , receive antenna(s)  $N$  and channel tap(s)  $L$ .